NAVAL POSTGRADUATE SCHOOL
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THESIS

RESOURCE IMPACT ON DOD SINGLE SCOPE BACKGROUND INVESTIGATON-PERIODIC REINVESTIGATION INITIATIVES (SSBI-PR)

by

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June 2002

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RESOURCE IMPACT ON SINGLE SCOPE BACKGROUND INVESTIGATION-PERIODIC REINVESTIGATIONS

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requirements for the degree of

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The resource impact of implementing selected changes to the Personnel Security Investigation (PSI) process was studied. The Phased Periodic Reinvestigation (Phased PR) and the Automated Continuing Evaluation System (ACES) initiatives were compared in terms of costs, schedule and performance with the current PSI process. Estimated impact costs of the ACES process were determined using estimates from adjudicated cases and applying relevant investigative and adjudicative process costs to the ACES product. The study found that ACES offers potential significant improvements in the performance of the PSI process by identifying issue-relevant cases earlier than the current PSI process. ACES coupled with the Phased PR process could increase the number of issue-cases identified without additional resources. The result would be a PSI process that has a significant increase in performance without any additional cost to the system.

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I. INTRODUCTION

A. PROBLEM

Secrets that affect national security are only as good as the people who keep them. The Department of Defense (DoD) personnel security system, which governs clearances and access to national secrets, has been remiss in its responsibilities to provide timely and accurate assessment of personnel who control those secrets. (GAO, 1999) The key agencies responsible within the DoD have had intense pressure to correct the problems contributing to why the personnel security system has not been able to deliver its personnel security product in a timely and reliable manner. The long-term solution to the problem of backlogs of investigations is still unclear, but the status quo delivery of investigations and clearances cannot continue because it threatens National Security (GAO, 1999).

The federal government uses personnel security investigations to determine whether an individual should be granted access to classified information. Because these investigations are the critical first step in safeguarding national security information, it is imperative that the system of personnel investigations remains credible and reliable. The personnel security investigation process has not maintained the standards set by the President of the United States. GAO concluded that deficiencies in the personnel security investigation process posed a risk to national security. (GAO, 1999) The breakdown of the personnel security system precipitated studies to seek ways to improve the personnel security investigation process. In addition to research addressing the productivity of sources required for investigation, other studies revealed that the personnel security clearance system has been maintained with little regard to the cost-effectiveness of the total system. (Heuer, 2001) Because the personnel security system is to a large extent governed by federal guidelines and thus under political decision making rules, substantially changing the system has been considered next to impossible. (Joint Security Commission, 1994, 1999) The personnel security system has not been able to conduct timely clearances or investigations, as evidence by the backlog by GAO. (GAO, 1999) The common recommendation of the various studies is to implement immediate

changes to fix the Personnel Security Investigation (PSI) system, which is resistant to change. The problems with the personnel security clearance process are easier to assess than they are is to correct, but rational decisions, using accepted risk management approaches, must be employed if the system is to maintain its effectiveness. The use of automated data systems to replace manual collection processes has been routinely accepted as progress in business and government alike, and the personnel security system should be no exception. Failure to adopt rational and reliable standards for the personnel security system will compromise the progress of national security vice defend it. The solution to the process incorporates finding savings where appropriate and reinvesting them in improved processes when applicable.

B. SOLUTIONS PROPOSED

The PSI process needs to change. The resources spent investigating unproductive information sources on people who show no signs of misconduct is costing millions of dollars. The PSI process must follow mandated federal guidelines, but needs to be revised to better differentiate between subjects with issues from subjects without issues. In terms of the number of interviews and records checks conducted, both types of subjects are currently treated the same. This standard application of the guidelines is costly in time and resources. The solution is to apply cost and productivity analyses to the PSI process and apply resources to those personnel who need the most attention. Personnel with issues of concern pose a greater threat to national security. Cost benefit analysis and information source productivity analysis as proposed by some people and studies would allow for those resources to be used to improve the PSI process.

C. IF SOLUTIONS NOT IMPLEMENTED

If the PSI system follows the status quo and operates under guidelines that favor a “one size fits all” approach over productivity and results, the system will continue to lose credibility and effectiveness. Following the same procedures of investigating subjects and issuing clearances without concern for the costs and productivity of the sources used is not good financial stewardship of public resources. While the PSI system is governed in large part by federal guidelines, the process needs to adapt to changing technology and data gathering techniques and abandon those sources and techniques that produce very little results. The mix of risk management and cost benefit analysis should

be a cornerstone in determining what sources and procedures delivers the best results for the PSI program.

D. BACKGROUND

The Defense Security Service (DSS) is the primary provider of background investigations for the Department of Defense (DoD). While DSS is currently responsible for DoD security education and industrial security programs, the major product it delivers to the DoD is Personnel Security Investigations (PSIs). Obtaining security clearances is a two-step process: investigation and adjudication. Security clearances are the best assurances available, based upon personal information, that cleared personnel are not security risks and meet the requirements for holding positions of trust that expose them to sensitive or classified information. The investigative product, typically performed by Special Agents (SAs) of DSS, contains personal information concerning an individual's character, loyalty, emotional stability and reliability. Adjudicators use the investigation results to determine if a person should be granted new or continued access to national secrets. The information contained in the investigation report is a snapshot of a person's past and serves as a predictor of the person's future behavior.

A member of the Armed Services, a DoD civilian or a DoD contractor must have a background check completed prior to unescorted entry into sensitive areas. DSS conducts PSIs in accordance with Executive Orders 10450 (1953), 10865 (1960) and 12968 (1997). These orders mandate that personnel assigned to sensitive positions with exposure to classified information be granted clearance access to that information only when an investigation into the person's behavioral history affirms the individual is trustworthy and loyal to the United States.

Major reviews of the PSI process in the mid-1980s revealed significant shortcomings. The Joint Security Review Commission, known as the Stillwell Commission (1985) and the The Joint Security Commission (1994) made several recommendations to further strengthen the PSI program. One of those recommendations was that increased importance should be placed on the Periodic Reinvestigation (PR) of cleared personnel. The premise was based upon then recent espionage cases (e.g., John Walker, Aldrich Ames) where trusted individuals, with requisite clearances, were engaged in espionage,

and a PR may have detected signs of that espionage had a thorough and timely investigation PR been conducted. PRs reaffirm an individual's commitment to behave in a reliable and trustworthy manner. They do so by reinvestigating sources from the original investigation in addition to seeking information from other more recent sources.

Given that everyone receiving a PR has already had an initial background check, the PRs' primary focus is not on providing a "whole person" benchmark. The "whole person" concept considers all positive and negative aspects of a person's background and manner of behavior in relation to the specific position or assignment considered. (Timm, 1991) It assumes that the while a person's past behavior is the best predictor of future behavior, people change over time, and major life events drive those changes. The PR tends to focus more on just one element of the whole person concept--trying to determine whether issues of concern have emerged that may reflect negatively upon the continued eligibility for clearance. Given that people holding security clearances have already been "screened in," it is more efficient to focus PRs on issues that might warrant their being "screened out" instead of also seeking positive information. Unless significant derogatory information is found, there would be no reason to consider revoking a person's clearance. Additionally, PRs may have some deterrent effect on individuals who understand they will be subject to a PR in the future.

Periodic Reinvestigations, as a whole, seldom result in revocation of security clearances for personnel currently holding them. Negative adjudication from the Central Adjudication Facilities (CAFs) occurs in less than 3.8 percent of the PRs conducted, and in most of those situations the individual and/or command withdraws their request for request for clearance action, instead of the clearance being officially revoked. (Wiskoff and Fitz, 1991) During periods when resources are scarce the tendency is to (a) shuffle resources to investigations that are needed to be conducted before people can be granted access to classified information and are more likely to detect issues of security concern and (b) curtail funding to those that are less likely to affect operations or reveal problems. Consequently, PRs have suffered ebbs and flows of funding priority within the DoD. Although PRs remain a critical element in the PSI process in part because of the potential negative consequences they help deter, priority and subsequently funding are always a challenge for PRs.

The PR backlog problem caused by the DoD investigation process was highlighted in an October 1999 GAO Report. It was described as threatening national security and estimated (at that point in time) at 600,000 backlogged PRs. DoD and DSS cited several reasons for the backlog in their response to Congress, including miscommunication and failure to receive adequate resources to cover the new standards set by Executive Order 12968. Executive Order 12968, issued in 1997, changed several investigation requirements that precipitated additional requirements on periodic reinvestigations. DSS also cited the DOD's previous quota on the number of PRs that could be submitted from service agencies and the incomplete implementation of the Case Control Management System (CCMS) as major factors in creating the backlog of PRs. Since the GAO reports, DoD has responded in much the same way as they did in the early 1980s, to fix the backlog with additional resources and oversight. The increased pressure to eradicate the backlog of PRs precipitated studies (e.g., Joint Security Commission, 1999, Defense Personnel Research Center, 1999, 2000, 2001) on how to help solve that problem.

While it may be theoretically possible to investigate every aspect of a cleared person's background, it would be prohibitively costly in time and money. Given that the DoD has 1.2 million military and 1.2 million civilian and contractor personnel with various levels of clearances, it becomes a resources balancing act to manage all the necessary investigations. Resources must be directed to those data sources that are the most productive in determining a person's fitness for sensitive positions. When originally established, DSS, (formally DIS) found a particularly good set of sources which was labeled the National Agency Check (NAC). The NAC contained approximately four sources for information. These sources were considered one of the best sets of information available, but that situation has since changed. Information exchange has evolved and so have the sources. As predicted by Euske and Ward (1998), financial information found on credit reports and identified by computer analysis has helped to identify personnel with issue-relevant cases. The access to personal financial information has become relatively inexpensive due largely to the availability of credit histories from commercial sources.

Which sources produce the most useful information? The Source Yield Study, (Kramer, et al, 2000) provides insights regarding how useful different types of information are to the adjudicators. The study concluded that the best sources were often the least costly, and the poorest sources of information were sometime the most costly. This revelation led researchers to question the productivity of each source required under the current PSI standard. A subsequent study, Phased SSBI-PR, (Heuer et al, 2001) revealed that approximately 30 percent of the resources currently spent on SSBI-PRs only altered the designation of a case from non-issue to issue in two tenths of a percent of the total PRs conducted yearly. (Heuer, 2001) This means that DSS is currently spending approximately 20 million dollars (FY03$) to identify 140 additional issue cases under the present PR process. (PBD, 2001) The study found no situation where adjudicative actions developed from the least productive set of sources alone. In terms of cost and benefit, there appeared to be a significant cost chasing very little benefit by continued review of those non-productive sources in all cases. Although this finding provides an opportunity for a significant cost savings, to date there has been limited interest in any cost-cutting measure that results in an even modest performance degradation affecting national security. Although one case in 500 seems insignificant in terms of increased potential for compromised secrets, the significance is magnified by the potential negative consequences if any one of those missed cases actually involved espionage. Consequently, researchers proposed to more than offset any performance decrements resulting from phased PRs by taking advantage of automated data and automated screening during the interval between PRs. The Automated Continuing Evaluation System (ACES) pilot program, which commenced in December 2001, attempts to more than capture any potential marginal loss of performance the Phased PR process sacrifices using that approach.

E. DEFINITIONS AND ABBREVIATIONS

In order to help the reader understand the terminology used by the Defense Security Service, selected terms used in this report are listed in alphabetical order along with their definitions and abbreviations in Appendix K.

II. LITERATURE REVIEW

A. OVERVIEW

DSS, officially chartered in 1971, has evolved into its present form as a result of several defense reform initiatives. The latest evolution was in 1997 when the Defense Investigative Service (DIS) was renamed the Defense Security Services (DSS) and came under the direction, authority and control of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence, (C3I)). DSS has three primary business functions, (1) DoD security training and education, (2) industrial security programs and (3) its main function, conducting Personnel Security Investigations. The PSI Program accounts for almost 60 percent of DSS' budget and is by far the most visible business activity of DSS. The mission of the PSI Program is to conduct background investigations on individuals assigned to or affiliated with the DoD.

The PSI process consists of two distinct processes. The first process, the investigation, obtains personal information concerning an individual's character, loyalty, emotional stability, and reliability. The second process, the adjudication, is completed for all DoD clearances by one of eight Central Adjudication Facilities (CAFs). Specially trained adjudicators review the completed investigation products and make security clearance determinations based upon adjudication standards and investigation results. The specific levels of clearances granted are Top Secret (TS), Secret (S) and Confidential (C). After the clearance is issued and the person is granted access, the individual who was investigated and adjudicated becomes entrusted with access to material, information and systems that are sensitive in nature.

DSS employs approximately 2,500 people, including approximately 1200 Special Agents (SAs), located throughout the United States and Puerto Rico. (Cohen, 2000) DSS closes approximately 140,000 personnel security investigations yearly, on a budget of approximately $150 million. DSS conducts approximately 270,000 NAC-LCs, 45,000 SSBIs and 50,000 SSBI-PRs yearly. (DSS, 2002) This accounts for about 40 percent of the personnel security investigations performed by the entire federal government each year. The Office of Personnel Management's contract investigation service, United States

Investigation Service (USIS), also conducts about 40 percent, with the FBI and CIA splitting the remainder. (Cohen, 2000)

As part of its core function, DSS conducts initial SSBI and Periodic Reinvestigation (PRs) as mandated by Executive Order 12968. The primary purpose of the SSBI is to determine the person's suitability to hold a clearance through examination of that person's behavioral history. The data sources used are those that provide the best information on a person's character. Executive Order 12968 requires that the derogatory information be viewed in context of the "whole person" and mitigating circumstances be considered at all times. (Carney, 2000) The goal of the initial SSBI is to gather information that accurately reflects a subject's past behavior.

Although PRs use a majority of the same data sources, the purpose is slightly different. The purpose of the PRs is to determine continued eligibility for the clearance through data sources that reveal any issue-relevant or negative information. Because the person currently holds a clearance, the focus is to find issue-relevant information that could be of concern to adjudicators. Greater scrutiny is placed on possible negative issues, and sources are screened for negative trends. The PR's intent is to find as much negative information as possible to capture any behavioral changes that may affect the adjudicator's decision for clearance. If negative information is found, then positive and mitigating information is sought. If no negative information is found, then there is no reason to consider revoking the person's clearance. The PR process determines if cleared individuals still maintain character and behaviors consistent with other individuals entrusted with the care and handling of sensitive information. The scope and frequency of the PR depends on an individual's level of access eligibility.

B. INVESTIGATIVE PROCESS

The Executive Branch derives its powers to protect access to sensitive information from one of five statues: The Espionage Act, the National Security Act of 1947, the Atomic Energy Act of 1954, the Counter-intelligence and Security Enhancements Act of 1994 and the Freedom of Information Act. The National Security Act directs the Director of Central Intelligence to protect intelligence sources and methods from unauthorized disclosure. The Atomic Energy Act protects information

regarding atomic weapons and nuclear material. The Counterintelligence and Security Enhancement Act of 1994 amends the National Security Act and directs the President to develop uniform requirements for background investigations and access denial appeals. The Executive Branch formalized these powers to protect national defense information through the issuance of Executive Orders. The first order issued by President Truman, followed by four revisions from Presidents Nixon, Carter, Reagan and Clinton, all amend the standards based upon philosophical and political differences. (Cohen, 2000) In addition, Executive Orders 12968 (1997) and 12958 (1997) set uniform standards for federal investigative and adjudicative processes and established a uniform system of classification and declassification for sensitive information, respectively. (Cohen, 2000)

DoD Regulation 5200.2-R establishes DoD personnel security policies, procedures, standards and guidelines for making personnel security determinations. The objective of the personnel security investigation is to determine an individual's eligibility for access to classified information and assignment to a sensitive or critical position. The clearance process begins when an agency requests the security clearance by submitting a DD Form 1879 and a Standard Form 86. The request is forwarded to DSS's Operations Center in Linthicum, Maryland, where it is reviewed by case analysts and then distributed to one of 12 DSS operating locations throughout the United States.

The DSS operating locations assign an investigator who seeks information in that geographic location about a subject's loyalty, character, reliability, trustworthiness, honesty and financial responsibility. The background check may be conducted in several DSS operating locations simultaneously depending on where the individual seeking the clearance lived, worked or attended school. The investigations are conducted in accordance with DoD 5200.2-R and the DSS Personnel Security Investigative Manual (i.e., DSS Manual 20-1-M.)

As investigative elements are completed, the field offices send the results back to the DSS Operations Center. The case analysts process any additional data sources and forward the completed investigation to the appropriate adjudication facility. Adjudicators review the investigative results and issue clearances based upon those investigative results in accordance with the Adjudicative Guidelines reflected in DoD 5200.2-R and

DCID 6/4. The requesting agency is notified of the clearance approval, or in some cases denial. If it was a positive decision the individual is eligible to be granted access to classified information commensurate with the clearance level granted. PRs are conducted in a similar manner with the exception that the request is internally generated based upon a subject's last investigation completion date.

Before employees in government or industry can have access to national security information, they must undergo a background investigation to determine whether they are sufficiently trustworthy to hold a security clearance. The length and complexity of the investigation is dependent on the type of clearance requested. The higher the clearance requested, the more in-depth the investigation. Top Secret clearance investigations are the most labor intensive and subsequently the most costly to complete. DSS uses a weighted measurement to estimate the man-hours required to complete various investigations and the initial Top Secret investigations are approximately eight times more labor intensive than the standard National Agency Check with Local Agency and Credit Checks (NAC-LC). The NACLC is considered DSS's standard man-hour measurement unit when making man-hour estimates. Top Secret PRs (TSPRs), with slightly fewer required data sources, are four times more labor intensive than the NAC. (DAF, 2001)

Before federal standards were introduced, each agency charged with sensitive information was responsible for establishing their own background investigation standards. National Security Directive *63,* issued by the White House in 1991, established the formal standards for a comprehensive single background check for all federal agencies. Data sources and requirements were combined into a single unified standard, known as the Single Scope Background Investigation (SSBI). (Cohen, 2001) This investigation became the benchmark for investigations within the federal government and the sources were considered the best available at the time. Since 1991, more security relevant information has become available through government and commercial automated data systems. According to Cohen (2000), the sources used today provide much better information than those used a decade ago.

The objective of the DoD PSI process is to determine the suitability of an individual holding a clearance to handle classified material. An individual's eligibility for a security clearance is based upon Executive Order 12968, which requires an over-all common sense determination based upon reviewing the sources that reveal the "whole person" in terms of (1) allegiance to the United States; (2) foreign influence; (3) foreign preference; (4) sexual behavior; (5) personal conduct; (6) financial considerations; (7) alcohol consumption; (8) drug involvement; (9) emotional, mental and personality disorders; (10) criminal conduct; (11) security violations; (12) outside activities; and (13) misuse of information technology systems. (Cohen, 2000) The goal of the investigation is to understand the whole person, and this process has tended to require as much information as possible about a subject being investigated. Consequently, the investigative sources used to extract information regarding the whole person include the following: (1) subject interview; (2) spouse interview; (3) vital information check; (4) national agency check; (5) financial review; (6) citizenship; (7) education verification; (8) reference interviews; (9) employment records/interview; (10) neighborhood interviews; (11) local agency check; (12) public records; and (13) treasury check.

The DoD's ability to comply with federal investigative guidelines for security clearances virtually collapsed during the late 1990's. With the release of GAO Report NSAID-00-12, in October of 1999, the level of scrutiny applied to DSS and Assistant Secretary of Defense for Command, Control, Communications and Intelligence, ASD (C3I), was intense. The report charged that DSS' investigations were incomplete, untimely and failed to meet federal standards. Of particular interest was the number of backlogged Periodic Reinvestigations (PRs.) Since there was no automated system to accurately account for backlogged PRs, the number had to be estimated. GAO estimated the number of backlogged PRs to be 505,000. These were in addition to the yearly requirements for 50,000 or more TSPRs. (GAO, 1999)

Several reasons contributed to the collapse of the investigation process. The causes included a 40 percent reduction in DSS personnel with no proportionate decrease in workload, failed implementation of the Case Control Management System (CCMS), implementing the more labor intensive NAC-LC standard for secret and confidential

clearances, and the implementation by ASD (C3I) of a quota for all DoD components that was considerably lower than the number of yearly PRs falling due.

DSS has experienced a 24 percent decrease in the number of investigators since 1991, while its actual workload has increased. (GAO, 1999) When DSS changed the process for secret and confidential investigations to meet federal guidelines, the impact was felt directly by the investigators. Changing from the National Agency Check (NAC) to a NAC with local agency and credit checks increased the number of issue-relevant leads on which the investigators had to follow-up. The expansion rate of the new NAC-LC was not offset with additional resources for DSS, (e.g., investigators).

Additionally, in May of 1999, the quota system imposed in 1995 by the ASD (C3I) was lifted. Originally imposed to improve investigation completion time for DSS, the restrictive quota of 40,000 secret and 42,000 top secret PR investigations per year was well below what was needed by the DoD components and contributed to the backlog of PRs that were not submitted until 1999. This number of backlogged PRs held by the DoD components came at the same time problems were arising from the newly installed Case Control Management System (CCMS.) CCMS was a prematurely fielded information management system that did not have all the functional elements working when implemented. The implementation caused confusion and generated additional workload problems for the DSS staff and the CAFs when investigative standards were changing and quotas were lifted. The result was DSS was struggling to keep investigations flowing and having to prioritize and shuffle those cases with the highest priority. The fact that incomplete PRs do not automatically result in clearance removal, affect their priority with the PRs typically being considered less critical than conducting initial SSBIs for personnel who would be unable to perform their duties without their needed clearance and access.

Based upon Executive Order 12968 and recommendations from the Joint Security Commission (1994) federal policy now dictates that every person holding a clearance for classified information must undergo a periodic reinvestigation (PR) to determine continued fitness for handling this information. Following a modified standard, PRs are required for personnel holding Top Secret clearances once every five years. While the

initial SSBI provides a baseline for new personnel, the PR encompasses checks of most of the same sources to assess consistency and identify any additional problems that may have surfaced since the last investigation. The objective is to determine if a subject is still trustworthy and loyal enough to handle classified material. Prior research suggests, and espionage cases of the mid 1980s and the 1990s confirm, that virtually all damaging espionage comes from cases that involve trusted individuals who had already been granted access to sensitive material. It's because of this that PRs are as critical in the maintenance of a solid information security program as the initial screening. In addition to detection, PRs may also aid in terms of helping to provide a deterrent effect for those cleared personnel with access to sensitive information. But with limited resources, every agency is forced to make difficult funding decisions. While DSS conducted PRs under a mandated DoD quota sytem, the backlog of PRs grew until Congress launched its investigation in October 1999. The next section of this thesis examines additional studies that were completed after the original congressional inquiry and assesses the potential impact of their recommendations in terms of cost, performance and schedule.

C. LITERATURE REVIEW

The first study reviewed here, SSBI-PR Source Yield: An Examination of Sources Contacted During the SSBI-PR (Kramer et al), commonly referred to as the "productivity of sources study," evaluated 4,721 SSBI-PR cases from four agencies. The study documented how the information from 4,721 cases was categorized and coded for further analysis.

A second study, A New Approach to the SSBI-PR: Assessment of a Phased Reinvestigation, is known as the 'phased PR study.' It concluded that 98.7 percent of all issue-relevant cases that were identified in a full PR were identified with only eight of the twelve data sources required in the PR. Secondly, it compared the cost and usefulness of the individual investigation elements of the PRs. The study reported that the top producing sources accounted for only 58 percent of the total cost of the PR. Conversely, unproductive sources, such as the neighborhood interview, produced only 1 percent of the issue-relevant information while comprising 20 percent of the total PR cost. These findings were consistent with the 1994 Joint Security Commission's recommendations regarding unproductive sources of data. (JSC, 1994) The phased PR study suggests that

changes in the PR investigation standard are both desirable and feasible. The actual number of interviews conducted in issue-free cases and issue-relevant cases differed very little because the Investigative Standard requires a minimum number of interviews to be conducted. The phased PR study supplied evidence that conducting interviews only when there is evidence from a selected subset of sources would eliminate costly interviews that have a marginal return of issue-relevant information.

The Defense Personnel Security Research Center (PERSEREC) Database Matching Pilot Study, (Chandler, Timm, Massey, Zimmerman), conducted in 2001, assessed the potential value of providing additional database information to Special Agents. The study highlighted the fact that many electronic data sources are currently not being made available for Special Agents review and identified the electronic sources that provided the most issue-relevant information.

The ACES Pilot Study, conducted by PERSEREC, commenced in December 2001 and is scheduled to be complete by October 2002. The study examines the usefulness of automated data sources and data analysis in identifying cases with issue-relevant information. The purpose of ACES is to systematically conduct automated checks of government and commercial databases to identify cleared personnel who appear to be engaging in acts of security concern in between regular personnel security investigations. ACES will routinely check existing databases and identify personnel with issue-relevant information. The primary benefit of ACES is the ability to identify cleared personnel with issue-relevant information and report the cases to the CAF before the regularly scheduled PR. This pilot study is attempting to address the selection criteria for identifying cases of concern as well to examine how the cases are processed by the CAFs for validation of that criterion. The cases identified with ACES will be processed through the CAF using normal adjudication guidelines. Through use of automated data exchange, ACES could potentially check cleared personnel annually vice every five years.

Within any agency there is a normal attrition of employees for a variety of reasons and, therefore, some employees never make it to their next five-year PR. If the attrition rate over a five-year period for a Top Secret cleared population of 500,000 is 30 percent,

then approximately 150,000 of those 500,000 people will never have their next PR conducted. Knowing that they will not be subject to further investigations would eliminate the deterrent value of PRs for those individuals.

The ACES pilot study will quantify how many additional personnel have issues of concern identified by checking their records that would have been overlooked until the next scheduled PR. Because ACES is a personnel security monitoring technique that will invariably identify some additional cases, this intent of this study is to assess the cost of ACES to the PSI process and the benefits received from using it.

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III. METHODOLOGY

A. ARCHIVAL RESEARCH

A review of the relevant literature helped determine the causes for the DoD and Defense Security Service SSBI-PR backlogs. Relying primarily upon the following reports: GAO Report NAID-00; GAO Report NSIAD-00-65; GAO Report NSIAD-00-148, GAO Report NSIAD-00-246; GAO Report 01-465; GAO Report NSIAD-00-215; DoD Inspector General Report D-2000-11, the PSI process was reviewed and assessed in terms of cost, schedule, and performance.

Secondly, the following studies were reviewed: SSBI-PR Source Yield: An Examination of Sources Contacted During the SSBI-PR (Kramer, et al, 2001); A New Approach to the SSBI-PR: Assessment of a Phased Reinvestigation, (Heuer, et al, 2001); Database Matching Pilot Study. (Chandler, et al, 2001) Each study recommended improvements to the current PSI process. The recommendations in the Phased PR study were compared to the current PSI process in terms of cost, schedule and performance. Additionally, the performance of the ACES, which is being evaluated by a pilot study that is not scheduled for completion until October 2002, was estimated using an analysis of historical data from a previous study. The ACES performance was estimated using a database of adjudicated cases and running sample screenings against that database to identify issue-relevant cases. The selection criteria used to screen the data were similar to the criteria ACES will use to screen personnel in the external databases. Based upon the estimated performance results of ACES, the costs were determined using current investigation and adjudication practices. Several assumptions were made on how the PSI system would handle the ACES product since the program is still under development. The current and proposed PSI processes were compared to the anticipated costs of the ACES and a trade-off analysis was made highlighting the costs and performance of each.

The study is limited to information relating to the Single Scope Background Investigation-Periodic Reinvestigation (SSBI-PR) due to time and resource constraints, as well as to both the seriousness of the backlog associated the reinvestigations and the potential for improving performance in this sphere.

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IV. ANALYSIS

A. THE CURRENT SSBI-PR ANALYSIS

1. Cost

The primary cost associated with PRs is the labor needed to conduct them. The labor involved to conduct a PR determines how costly an investigation becomes and is largely determined by how many interviews are performed and by how many issues surface which need further clarification. The most direct route to estimating the costs is to estimate the individual elements of a PR. PRs have two categories of elements: data sources and interviews. Access to data sources such as credit histories, local criminal records and immigration records is inexpensive. Access to those sources comprises about 20 percent of the total cost of a investigation. (Heuer, 2001) This leaves 80 percent of the cost of an investigation in interviews.

Since each investigation is unique and solely dependent upon a subject's past behavior, each investigation becomes a custom product for the adjudicators. Although each investigation must follow a series of minimum standards addressed in DoD 5200.2, the expansion of each investigation is again a product of a subject's past. Consequently placing a price tag on the cost of a PR is difficult. Historical costs are the best source for determining the cost range of PRs.

DSS does not have an accounting system capable of determining the actual costs of PRs. For budgetary purposes, DSS uses a relative weighting factor based upon a level of difficulty experienced by Special Agents conducting actual PRs. The National Agency Check with Local Agency and Credit checks (NACLC) is the standard by which all other investigation types are measured in terms of difficulty and manpower. The NACLC is considered to have a fixed impact on investigation costs due to the requirement to conduct local agency checks throughout the United States. It is considered by DSS to be the best standard to compare other investigations to determine resource requirements. Based upon the DSS standard weighted relationship, a Top Secret PR is 4.85 times more costly or labor intensive than a NACLC and subsequently is 4.85 more expensive than a NACLC. (DAF, 2001) Although the weighting standard is an estimate, actual costs and

reported spending plans place the actual costs of a TSPR at $1,581 (DSS, 2002) This nearly double the $875 the figure reported in the Air Force memorandum detailing the costs of the various DSS investigations. (DAF, 2001). The May 2002 FY03 DSS spending plan estimates the costs of the TSPR at $1,591 (DSS, 2002) and is closer to the actual costs reported by independent contractors as reported in Table 1.

FY03 ($)		DSS	Mantec	DynCorp	GBSG	MSM	Omni	OPM
TSPR Costs		$875.47	$2,689.73	$1,573.75	$1,509.04	$1,091.33	$1,461.36	$1,924.21

Table 1. Reported TSPR Costs (DAF, 2001)

From the available information it is evident that the actual costs of the PR differ depending on the provider of the investigation. In order to accurately compare these reported figures to each other, the assumption must be made that the investigative process and products are similar for all investigative providers. For this analysis, the cost of the TSPR need not be precise, but a reasonable figure based upon the best available information which will be used to calculate potential savings from implementing the Phased PR. Therefore, based upon all the available data, the cost of a TSPR is considered to be $1,500 and all cost savings calculations will be based upon that number.

2. Schedule

Because PRs are labor intensive it not only drives the costs of the PRs, but the timeframe in which the product can be delivered. The time required to complete an investigation is calculated from the date the security clearance request (SF-86) is received by the DSS Operations Center to the date the final investigation products are sent to the CAF. DSS has goals for completion time based upon DoD components requirements. Table 2 shows those completion goals. (DAF, 2001)

Type of Investigation	Percentage of Investigations Complete		
	75 %	90%	95%
SSBI	240 days	276 days	-
TSPR	210 days	276 days	-
NACLC	114 days	-	228 days
Auto-ENTNAC	-	30 days	-

Table 2. DSS Completion Time Goals (DAF, 2001)

DSS has not always been able to maintain completion times within these goals. In 1994 the average completion time for TSPR was 149 days. (Joint Security Commision, 1994) By 1998, the average completion time for TSPR had risen to 204 days (GAO 1999) and by April 2001, the average completion time was near 262 days. (IG 2001) Through the use of external agencies, namely OPM and private contractors, DSS has been able to bring the average TSPR completion time down to 200 days. (DSS, 2002) The reason for the improvement was the additional resources and oversight placed on DSS since the initial GAO report.

3. Performance

Performance is the most difficult element to ascertain. Because the intent of the PSI program is to uncover unsavory aspects of individual behavior through an invasive search of private information, the number of negative issues it uncovers measures its success. The best sources are ones that deliver accurate and highly relevant negative information about some of our potential and current clearance holders. Some sources produce better results than others. (Heuer, 2001) Organizations such as DSS are always faced with scarce resources and proper use of those funds requires prioritization of productive sources. Because of the scarcity of resources, performance must be tied to the cost and schedule of the program. Since the adjudicators are making a determination of

fitness to handle sensitive material based upon the relationship of issue-relevant data and future behavior, the PSI program that delivers the most relevant data to the adjudicator at the lowest cost is therefore better than the others that do so at higher costs. Performance of the PSI process is based largely on controlling the costs and delivering timely investigative products to the CAFs. The performance benchmark for the PSI process must include costs and schedule. Since there is no wholesale rejection of the current system by ASD (C3I) or the customers who use the products, the current PSI system with current costs, schedules and performance is the standard by which to measure improvements.

B. PROPOSED PHASED PR ANALYSIS

1. Overview

As demonstrated by the phased pilot study results, there is value in prioritizing the PR in terms of productivity of data sources and the cost of those sources. Table 3 has the individual elements required for the TSPR as reported by DSS. (Heuer, 2001) Included in Table 3 are costs in terms of percentage of total cost of the TSPR. The elements are categorized in terms of Phase I and Phase II according to the Phase PR Study recommendations. The Phase I sources correctly identified 99.4 percent of all cases that had issue-relevant information in the final adjudication of the case. Nine cases out of 4,721 were not categorized as issue cases by screening the Phase I elements alone, but were later found to have issue-relevant information using the expanded Phase II investigation sources. The study concluded that relatively few cases would have issue-relevant information found in Phase II investigation sources that would not have been detected by an expanded investigation triggered by Phase I sources. One case in 500 would have issue-relevant information in Phase II sources but none detected in Phase I sources.

2. Cost

The Phased PR study illustrated that savings could be realized by implementing a Phased approach to the PRs. Because the Phase I sources identified 99.4 percent of all cases having any issue-relevant information, the resources spent on Phase II sources became unnecessary for the many of the cases. The individual elements of the PR and associated costs reported in the DSS' cost study calculated the manpower required for

each type of records check and interviews conducted. The figures were based on actual cost data submitted by SAs in the field and serve as the best source of elemental costs of TSPRs available. Although the cost calculation listed in Table 3 is in FY 1997 dollars, the costs of each element as a percentage of the total cost of the TSPR are assumed to be constant since the process of PRs has not changed dramatically since 1997. (Cohen, 2000) Therefore, we can assume that Phase I elements share the same percentage of the TSPR cost today as they did in 1997. Table 3 illustrates that Phase I data sources and interviews comprise 58.4 percent of the total costs for the TSPR.

	Average Cost/Case	% Total Cost of TSPR	Phase
Interview Sources	~FY97$		
Subject Interview	250.26	24.50%	Phase I
Listed References	132.04	12.93%	Phase II
Developed References	38.54	3.77%	Phase II
Residence Interviews	254.39	24.91%	Phase II
Employment References	163.07	15.97%	Phase I
Record Sources			
Local Agency Checks	41.40	4.05%	Phase I
National Agency Checks (NAC)	17.73	1.74%	Phase I
Credit Records	1.30	0.13%	Phase I
Employment Records	59.15	5.79%	Phase I
Court Records	10.31	1.01%	Phase I
Other Checks	52.85	5.20%	Phase I
Total Case Cost	1021.04	100.00%	Phase I
Phase I Elements		58.40%	
Phase II Elements		41.60%	

Table 3. TSPR Required Sources (Heuer, 2001)

The remaining 41.6 percent of the total costs could be saved if every TSPR was conducted using only Phase I data sources. Assuming the requirements for TSPR remain

steady, DSS could expect approximately 64,000 TSPRs for FY03. If every TSPR used only Phase I data sources, the savings could be as much as 41.6 percent of the of the cost of TSPR. If we use the estimated cost of TSPR at $1,500, then as much as $624 could be saved for each TSPR conducted. If all 64,000 TSPR used only the Phase I data sources, that would equate to an annual savings near $39,936,000.

Because investigations deal with assessing the human behavior, it is reasonable to believe that not all TSPRs would qualify for the Phase I data sources only. It is known from the Phased PR study that a significant number of people who have one or more issues will be detected by Phase I sources, which will trigger a complete investigation using Phase II sources. In addition, there will be a small percentage of people who will have Phase II sources checked at random to ensure that the relationship between Phase I and Phase II sources justify use of this Phased approach and that this relationship does not change over time. Therefore, the Phased PR study recommended a more conservative and realistic number of people who will qualify for using only the Phase I data sources that was 60 to 70 percent of the total TSPRs, while the remaining 40 to 30 percent would require both Phase I and II data sources to complete the TSPR.

Second, the savings of 41.6 percent is the most optimistic estimate for savings. Because the DSS cost study used manpower estimates with actual costs for a given time period, the actual savings could vary greatly. The Phased PR study considered that the 41.6 percent savings per TSPR is the maximum savings and recommended a cost savings of 30 percent as an expected minimum for its calculation. The Phased PR study recognized that not all TSPRs would qualify and not all savings can be realized with each TSPR. Therefore, the minimum cost savings as proposed by the Phased PR would be the 60 percent eligible multiplied by the 30 percent savings from the elimination of the Phase II elements for a total savings of about 18 percent of all the TSPR conducted. That would be a savings of 270 dollars for every TSPR conducted annually, or based upon 64,000 scheduled TSPRs it would save approximately 17.3 million dollars annually. The upper threshold of savings could be as much as 27.9 million if as many as 70 percent of the TSPRs qualified for the 41. 6 percent savings. Therefore the expected range of cost savings from the Phased PR is from 17.3 to 27.9 million dollars annually.

3. Schedule

The Phased PR Study showed that at least 18 percent of the resources spent on TSPRs could be saved if the Phase PR approach were used. An alternative would be that Phased PRs could be accomplished 18 percent sooner. An 18 percent savings in TSPR delivery time could be as much as 72 days savings on TSPR completion times. This impact is especially important given the previous backlog cases sometimes sat without actions for periods exceeding 400 days. (IG, 2001)

4. Performance

The Phased PR pilot study found that one case in 500 would not be properly reviewed by the adjudicators because the Phase I data sources did not reveal any evidence that Phase II would provide issue-relevant information, even though it was actually present. In terms of personnel security, the one case in 500 may be an acceptable risk to the PSI process considering that none of the missed information resulted in a negative adjudication being taken. The cost to identify this one case in 500 (or approximately 128 cases a year based on an annual workload of 64,000 TSPRs) is the savings sacrificed by forgoing the use of the Phased PR approach. This could be $17.28 million dollars for every 128 cases or $135,000 per additional case identified using the current PR approach. This decrease in the potential performance of using Phase PRs requires a risk management decision and rational application of limited resources by the policy decision makers.

C. PROPOSED ACES PILOT STUDY ANALYSIS

1. Overview

ACES is a stand alone software program that extracts information from federal and state public databases via electronic exchange, analyzes the information according to predefined selection criteria and notifies adjudicators at the CAFs of issue-relevant information on the subjects who were screened. Currently, the ACES pilot study is defining the system requirements according to inputs from the CAF adjudicators. The process and system requirements are discussed in Appendix J.

2. Cost

Cost elements of ACES are either direct or indirect. Direct Costs are those associated directly with the development, test, operation and maintenance of the ACES system and interfaces. This includes the personnel, hardware, software and overhead costs of the ACES program. For the purposes of this analysis, these costs will remain relatively static with the assumption that the program management plan accurately reflects the scope and requirements that the ACES program will fulfill. The direct costs are estimated in the ACES program management document with some elements contained in Appendix J.

3. Indirect Costs

The indirect costs are those costs associated with ACES that are not covered in the ACES direct cost program budget. These would include the costs for conducting the database checks not covered in the fee arrangement and the additional costs associated with the increased workload for the respective CAFs and investigative agencies. All services that have personnel screened by ACES will have additional personnel screenings and adjudications that are not currently budgeted. Since the ACES product is delivered directly to the CAFs, the additional workload and subsequent costs for investigations by DSS will be passed directly onto the services.

Indirect costs or impact costs for ACES will be driven by two major factors. Two questions will address those factors, how many additional cases will ACES generate and what will be the final disposition of those new cases? The impact costs of ACES are not represented in the management plan and these costs will be shared by external agencies including the CAFs and DSS in terms of resources needed to pay for the additional manpower required.

a. Schedule

ACES will identify cases in addition to those identified by the current processes. Calculating how many ACES cases will identify is determined in part by understanding how many people will be screened and the probability that any of those people screened will have issues detected by ACES. According to the ACES program management plan, the first set of personnel to have their records screened will be the

personnel who hold Top Secret clearances and reach the 30 month anniversary from their last PR or SSBI, labeled in this analysis as Top Secret (Mid-Point) or TS-MP. The second phase of the screening will advance to all Top Secret clearance holders on an annual basis, labeled in this analysis as Top Secret (Annual) or TS-A. A third phase, which would be optional, would address personnel with Secret clearance who have reached their 60 month anniversary since their last PR or SSBI. These will be labeled as Secret-Mid Point or Secret (MP). The number of records screened is based upon the assumption that the total Top Secret population is approximately 500,000 personnel and the Secret population is approximately 2,000,000 personnel. (Timm, 2002) In order to make the estimate more realistic, it is assumed that there is an annual attrition rate of 5 percent of personnel. This will account for personnel reassigned, terminated or otherwise not included in the screening. The number of personnel included in the schedule of ACES screening is included in Appendix C.

The databases ACES will access will eventually include those listed in Appendix A. Other studies have relevant data pertaining to some of those same databases, namely the Source Yield Study and the Phased PR Study, which have issue "hit rate" data for actual subjects with actual clearances. These studies also have adjudicative results of the cases identified as having issue-relevant information found in those databases. For this analysis, the information contained in the databases will be examined with ACES-like selection criteria and sources, and the results will serve as an estimate of how many issue cases ACES would identify when screening records in those databases. Hence, the Sources Yield Study database contains information relevant to the calculation of the preliminary ACES performance metrics. It contains information on subjects who have been issued a final adjudication and can be used to help benchmark how many cases the ACES-like selection criteria and sources will identify. Analyses were performed to identify how many issue cases were identified by the ACES-like sources alone using data acquired from the Phased PR study and selecting the data fields listed in Appendix D.

For this analysis, ACES simulation screening was performed on data acquired for the Phase PR study. The Phased PR study contained data on 1,611 DoD clearance holders, which was determined to be a large enough sample to meet the statistical requirement to provide a 99 percent confidence interval for the population of concern.

The ACES pilot study will sample approximately 15,000 records distributed over a 10-month period. The 1,611 person DoD sample used in the Phased Pilot study will be used to obtain preliminary estimates of the "hit rates" and adjudication outcome of those cases until more of the ACES pilot study data becomes available. The Phased PR records are the best available source of data since they have final adjudication results and can be selected on the basis of the same record sources used by ACES. Hence, not only will the analyses indicate the proportion of people having one or more issues using a set of records similar to the ones reviewed by ACES, but they will also reflect how those issues are likely to be handled by the CAFs.

b. Assumptions

The cost drivers for the ACES cases can be divided into the costs to handle the cases by the CAFs and the costs to investigate the cases by DSS. Once ACES identifies an issue-case, how the cases are handled or adjudicated will be a product of each service's policies and procedures. The handling procedures and investigative thresholds each agency chooses to act upon should be similar to the present methods. For the purposes of this analysis we will assume that the ACES cases will be treated in the same manner as cases currently handled by the CAFs.

In addition to the handling costs of the ACES cases, there are bound to be investigative costs also. Because ACES will be identifying people who currently hold clearances who have issue-relevant information within their records, each case may require a Special Investigative Inquiry (SII.) Each agency's CAF can handle the ACES issue-cases in a number of ways including subject's command involvement, security officer involvement or subject interviews, but invariably some ACES cases will require an SII. This investigation is conducted by DSS, requires the most effort and resources, and serves as a good measure of the investigative costs the ACES cases may generate.

Regardless of how the ACES cases are handled or dismissed, the case review will require additional resources from the CAF. The serious cases will be investigated with an SII, while the less serious cases will be handled in a variety of other ways. Because the serious cases will be investigated by DSS and are often be more complex in nature, it is reasonable to expect senior personnel to handle the reviews for

the CAF. Therefore for this analysis the estimate of the salary costs for the CAF personnel will be based upon a Government Service Employee position 12, Step 5 with an annual salary of $56,619. See Appendix H for the FY 2002 General Schedule. The actual salary costs will be adjusted to reflect the full time benefits Government Service employees receive. The loading factor is based upon the general and administrative figures calculated as a composite of support personnel costs, non-support personnel costs, and facility costs. (Crawford et al, 1991) The loading factor of 52 percent is reasonable based upon current practices and will be used for this analysis.

c. How Many Aces Cases

First, the number of issues identified by the ACES-like sources criteria listed in Appendix E was assessed using the Phased PR database. The ACES-like sources identified 189 people of the 1,611 having at least one issue of concern addressed in the final adjudication. The results are reported in Appendix F, and illustrate that ACES-like sources and selection criteria identified 11.7 percent of all the people in the Phased PR sample, each one having at least one issue of concern identified by those sources. These 189 cases identified by ACES-simulated screening included 144 out of 263 moderate to serious cases found in the Phased PR study. The ACES-like sources, which are sources exclusively from public and commercial record databases, identified 55 percent of all the cases that had moderate to serious issue-relevant information. This proportion is considered impressive, because it did not include self-reported information included on the SF-86, which is one of the best sources of record-based information as identified in the Source Yield Study. For purposes of this study, we will assume 12 percent of the records screened by ACES will have at least one issue of concern. This figure appears reasonable, because while the Phased PR study covered a five year interval compared to ACES midpoint checks which will cover a two and half year interval, the ACES checks will cover more databases. It is believed the tow factors will be off-setting in nature. (Timm, 2002)

d. How Aces Cases Are Handled

Second, the proportion of people having issues that were considered a moderate or major concern by adjudicators affects the workload categories, listed in Appendix G. The fact that the ACES-like sources identified approximately 12 percent of

the sample as having at least one issue, but also that 75 percent of those people identified had issues that were of such severity to warrant a documented elevated level of concern will affect the investigator and adjudicator workloads. If the level of severity level is high enough, then according to typical CAF policies many of these cases would be referred to DSS for a Special Investigative Inquiry (SII). Based upon input from two subject matter experts, the percent of cases that will warrant an SII based upon similar severity and quantity of issues was set at 50 percent, which in both their opinions was the upper threshold of cases that would expand to SIIs. (Timm, 2002) Realistically, not every serious case would require an SII and several will invariably be resolved through less costly measures. This analysis will assume that 50 percent of the cases identified by ACES sources, as having one or more issues, will require an SII by DSS in order for the CAF to make a final adjudication.

The SIIs initiated by the CAFs require DSS to conduct tailored follow-up investigations on the issues of concern. The additional resources required to fully investigate the SII cases are reflected in the reported cost of SIIs. DSS' FY 2003 notional rates for SIIs are $1,342. (Draft Report, C3I, 2002) For the purposes of this analysis, $1,342 will be the charge for each SII DSS is tasked to perform as a result of the CAFs' request.

e. Handling/Adjudicative Costs

According the ACES study plan, the CAFs will review each ACES generated case. In certain cases, no further actions will be needed, such as when the issues reflected in the records are (a) considered too minor to warrant further actions, (b) the case pertains to someone other than the subject, or (c) the issues were already known or acted upon. In other cases the matter might be resolved based upon discussions with the subject's security manager, command or the subject himself. In other cases the case will require an SII to properly investigate the issue of concern. In each situation a subject's case will need to be reviewed and adjudicated based upon the information available. For the purposes of this analysis, it is assumed that the CAFs will need about the same amount of time to adjudicate as they need to handle SSBI-PRs and Continuing Evaluation cases that contain issues of concern.

The handling, adjudication and appeals that result from negative adjudications will consume CAF resources. Using manpower data from the Consolidation of Personnel Security Adjudication in DoD Study, October 1991, we can estimate the number of hours required to handle an ACES generated cases. Using the hours required to handle SSBI-PR and Continuing Evaluation cases that have issues, we can determine an estimate of the hours each ACES case with issues will take. The manpower hours, listed in Appendix H, are weighted to accommodate regular issue cases and those that are appealed and require additional manpower during the appeal. The weighted average hours per issue-TSPR case was 1.88 hours. The weighted average across the CAFs for Continuing Evaluations Issue Cases was 1.32 hours. These figures were based upon the total number of cases handled by all the CAFs during the study period. It was decided to base the number of hours required for adjudicators for each ACES issue case on the more conservative 1.88 hours per TSPR issue case.

f. Impact Costs

Based upon the assumptions previously stated, the results of the indirect impact cost estimate calculations are listed below in Table 4. The schedule of records to be screened was listed in the ACES program management plan and the results of the scheduled records to be screened are listed in Appendix L. From these results, we can see that the major cost driver is the investigative costs of the DSS, which comprise nearly 90 percent of the costs associated with the ACES impact, excluding direct and indirect ACES system costs.

The assumptions made during the analysis were based upon the available data and the known procedures of the agencies handling the ACES products.

Annual Costs (FY03$)	TS Mid Point	TS Annual	Secret Mid-Point
Records Screened	77,943	345,452	150,000
DSS Impact Cost	$6,275,192	$18,541,072	$19,775,712
CAF Impact Costs	$851,972	$3,146,975	$2,685,351
Total Impact Costs	$8,586,800	$24,790,756	$24,476,364

Table 4. Summary of Estimated ACES Impact Costs from Appendix J.

4. Schedule

By design the ACES program should require relatively few personnel to operate. The program management plan identifies personnel capable of operating the system. The ACES process capitalizes on the automation factor and will provide nearly instantaneous results. The development of the ACES process could incorporate automatic notification or issue detection for some of the databases used when the system matures. The program is still in the development stage, and the full impact of how and when ACES checks will be accomplished is to be determined. However, it's most certain that the near real-time screening will be only a small part of the total ACES process and the ACES product and subsequent CAF involvement will be the drivers of the schedule. How ACES is developed into the current PSI schedule will need to be addressed in subsequent studies.

5. Performance

ACES performance is currently being tested with the ACES pilot study. The analysis in this thesis provides a rough order of magnitude of the impact costs that ACES products will have on the PSI and adjudication systems. If the performance assumptions hold similar to the ACES-like sources screened in the Phase PR study, then nearly 2.5 percent of the people having one or more issues identified by ACES will require a corrective adjudication action against them. This 2.5 percent figure will be tested in the ACES pilot study, but may indicate a rough performance improvement measure that ACES will provide. If we consider that ACES will generate approximately 12 percent of the records with one or more issues, it is reasonable to believe some of those issues will result in a negative adjudication. 2.5 percent will serve as a benchmark figure to assess ACES potential performance in generating investigations that result in corrective

adjudications as estimated in Table 5. Issues that ACES identifies that result in corrective adjudication actions (e.g., warnings, monitoring programs, revocation of clearance) will be discovered before a subject's next regularly scheduled PR. If earlier detection is considered beneficial to the overall personnel security clearance program, then the ACES process will invariably reap those benefits by generating additional issue cases.

	TS Mid Point	TS Annual	Secret Mid Point
Cases Identified	9,352	32,329	30,000
Cases Investigated	4,676	12,949	18,000
Negative Adjudications	234	808	750

Table 5. Estimated ACES Performance

From the estimates in Table 5, ACES performance could identify as many as 808 Top Secret cases that require corrective adjudication actions before the regularly scheduled PR. This would mean that as many as 808 cleared individual would have some adjudication actions issued against them because ACES found information that was of concern.

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V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

1. Overview

The objective of this thesis was to evaluate the personnel security initiatives that are being considered for introduction into the PSI process in terms of their costs, schedule and performance. The analysis used the current PSI process and compared the pertinent terms of performance to the proposed solutions recommended by the Phased PR study and the ACES pilot study. The processes used in the current PSI system were established and the performance measurements in terms of costs and schedules were determined based upon the available data. The initiatives and the proposed changes to the PSI process were evaluated in terms of the costs and schedule they will impact upon the current PSI process.

2. Answers to Research Questions

a. What are the benefits to implementing Phased SSBI-PRs?

Based upon the research and review of the Phased PR Pilot Study, the benefit to implementation of the Phased PR is the substantial savings that can be attained by not always investigating sources that provide very little issue-relevant information. The savings that can be reaped by not conducting investigations that use the sources categorized as Phase II sources when there is no evidence found in the Phase I sources that doing so would be productive, saving an estimated 20 percent of the total cost of the PRs. According to the estimates based upon expected costs of TSPR, this is an annual savings of nearly 20 million dollars. The resources saved then can be reinvested into improving the PSI process. Resources are being used for little marginal benefit based upon the results of the Phased PR study and the secondary analyses performed as part of this thesis.

b. What are the risks with Phased SSBI-PR?

The primary risk associated the Phased PR is that in rare cases it would sacrifice some level of performance compared to the current PR process. Although the data suggests that the loss of performance was minimal, with one case in 500 being

affected, the impact of mis-categorizing that one case depends on the nature of the issue that would have surfaced. In all cases identified to date those issues have not resulted in any corrective adjudication actions being taken (such as warnings, suspensions, or revocations). This fact allows us to rely on the Phase I sources as the primary sources to investigate, while only investigating the Phase II sources when evidence requires us to do so. It is this researcher's opinion, this would be the first attempt to apply a flexible standard of investigating subjects who have vastly different backgrounds and levels of inappropriate behavior surfaced. The strict application of the investigation standards without regard to either the costs involved to conduct an investigation or the utility of its components is costly and unproductive. The more dynamic approach to conducting investigations, applying fiscal stewardship and productivity assessments of various informational sources is a sensible approach to cost and risk management. Blindly following the procedures when evidence suggests that there is no reason to do so is a poor use of scarce resources. Moreover, expanding investigations when there is evidence suggesting a reason to do so, is a sensible approach to cost and risk management. This is a first attempt at redefining a process that has stagnated on the side of caution and at the expense of the productivity and credibility of the investigation system.

A secondary risk of implementing the Phased PR is dissolving interagency clearance and access reprocity. Each security agency has its own set of standards for granting access to personnel to handle sensitive information. Although the Phased PR may save resources, the marginal loss of issue-relevant cases, approximately 128 per year, may in some way compromise the perceived integrity of the PSI process. All agencies that have clearance processes will have to accept that the DoD has this Phased PR process and accept that it is slightly less productive than the original PSI system. Currently every agency with clearance processes accepts the minimum federal standards for clearance investigations applicable to other agencies. This allows for the exchange of information without requiring additional clearances at each governmental agency. This reciprocity may be jeopardized if agencies external to DoD do not accept the Phased PR as a legitimate investigation alternative. This could impact how DoD clearances are treated at other agencies and cause serious complications within the personnel security field.

c. What are the benefits to implementing ACES?

Because ACES uses automated data retrieval and screening, one of the benefits of ACES will provide will be the delivery of reports with issue-cases identified earlier than the current process. The system is designed to require very little human intervention, which will lead to quicker identification of issues with personnel who hold clearances. ACES will eventually be able to provide near-instantaneous reports on demand for CAFs and investigative agencies for personnel covered by the JPAS system (i.e., all DoD clearances holders). This extra level of automated screening will invariably identify issue-relevant cases earlier so that proper adjudication can take place and those deemed ineligible for handling classified information are removed sooner rather than later. ACES has the potential to tap into data sources that are not currently being used and to provide Special Agents and adjudicators with information critical to their investigations and adjudications.

d. What are the risks with ACES?

The system is new; it challenges the status quo and jeopardizes how business is currently being accomplished. Therefore, it will have opponents. Because the ACES program is under development it may have risks not yet identified. Based on how the system is to operate, the most critical risk ACES has to address is the additional workload it may produce. The additional screening ACES performs will ultimately add to the number of cases the investigators and adjudicators must handle. Because ACES may have the capacity to generate more issue cases than the system can currently handle, it could overwhelm the current PSI system with issue cases that tax resources beyond their current limits. The relative sensitivity within the DoD to investigation backlogs may jeopardize how many additional issue cases the system is willing to add regardless of how quickly they are identified.

a. Can combining Phased PRs and ACES produce benefits that outweigh the risks?

ACES is an extension to the improvement processes that DSS is trying to implement in part as a result of problems identified by the GAO. ACES capitalizes on

the use of automated databases and automatic screening processes to identify cases of concern. The impact of ACES could be far reaching as the performance it may provide could surpass any known screening technique available currently. The ACES pilot study will flesh out the specific performance results, but based upon initial estimates it looks as though ACES will definitely generate additional cases for review by the CAFs and DSS. The direct and indirect costs of the ACES system can be supported by the estimated savings from the Phase PR, but based upon current estimates only for the Top Secret Mid-Point or Annual Checks. The ACES impact costs may exceed the savings from the Phased PR if ACES is applied to both Top Secret clearance holders annually and to Secret clearance holders at mid-point. Although the assumptions and estimates err on the conservative side there might not be sufficient funds from the Phased PR to cover all expenses associated with running annual TS and/or Secret level mid-point checks. The additional cost ACES requires above the Phase PR savings may be worth the tradeoff when considering the performance ACES should deliver. The Phase PR could mis-categorize up to one case in 500, or an estimated 143 cases annually with few if any lost corrective actions, while ACES has the potential to generate as many as 700 cases each year that result in corrective adjudication action being taken. The net tradeoff appears to favor the use of those resources saved from the PR process to be used on the ACES product.

3. Recommendations

The PSI system has been in need of radical changes for quite some time. The credibility of the clearance system and the investigation process has been the subject of discussions. The process needs new approaches and needs to incorporate flexible standards that allow for sensible application of standards to those cases that warrant it. Because the majority of cleared personnel have no issues, the PSI process needs to focus on those cases that do have issues and devote more resources to them. Although the equitable application of the investigative standards is a noble venture required by current guidelines, the application of those standards without concern for cost and risk management analysis is a poor use of money.

4. Area for Further Research

The ACES pilot project will provide ample opportunity to determine the actual costs to the CAF and DSS. This analysis used the available information and made various assumptions on how the PSI system would handle the ACES product. The impact of ACES could be very profound and may change the way the PSI process is done. This analysis is the first of many in the process improvement of the PSI system. Additional cost savings may be found in the removal of the employment interviews from the PR process. They were the next least productive source and consumed a substantial amount of the investigative resources. Additional research is possible on how the individual services and agencies will handle the ACES cases. The cost and performance impact could have substantial effects on the resources those agencies apply to the investigation and adjudication of their employees. Although ACES is still in an evolving stage of development, it may change how the screening process is accomplished by shortening the time between periodic reviews.

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APPENDIX A: EXTERNAL DATABASES ACCESSED BY ACES

DSS Case Control Management System (CCMS)	Personal Information
Credit Bureau	Credit History Reports
Real Estate	Property Owned
FBI Criminal History	Name Check, Warrants
Bank Secrecy Act Reports	Large Currency Transactions
Suspicious Activity Reports	Large Currency Transactions
Customs Foreign Travel	Passport ID, Alien ID, Travel
INS I-94 Records	Non-resident Alien Check
DoD Personnel and Pay Records	Administrative Actions
OPM Federal Pay Records	Calculations for Affluence
DIBRS (Defense Incident Based Reporting System)	Formal Incident Reporting
Military Drug Test Results	Drug Usage
Military Child and Spouse Abuse Records	Formal Complaints Filed
Aircraft Ownership	Calculations for Affluence
Motor Vehicle Registration Records	Calculations for Affluence
State Boat Registration Records	Calculations for Affluence
Coast Guard Vessel Registration	Calculations for Affluence
PACER (Public Access to Court Electronic Records)	Local Criminal History
National Driver Register	Driver's License Suspension
Form 8300 IRS	Large Cash Transactions
OPM PSQ and Credit Records	Financial History
Defense Travel System	Foreign Travel Records

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APPENDIX B: ACES SAMPLE PRODUCT REPORT

ACES Summary Report
Feb 2, 2002 -- 12:43

SSN: **123-45-6789** Name: **Smith, Robert P.** Grade/Rank: **04/Major** Category: **Active Duty**

Description of any significant issues detected by ACES since the last full-scale reinvestigation:

Issue Category	Level	Issue	Source(s)	Date(s)
Drug Abuse	**Extreme**	**New use or possession of hard drugs**	**EPSQ**	**2002-01-04**
Financial	**Extreme**	**SAR(s) or CSAR(s)**	**FINCEN**	**2002-02-01**
		Foreclosure	**CREDIT**	**2002-02-04**
Foreign Influence	**Significant**	**Non-resident alien(s) from non-designated country staying at subject's residence**	**INS I-94**	**2002-02-13**

ACES Points Issued

Random Chance Point	**0**	**Not randomly selected**
Issues in Last Investigation	**1**	**Financial, Criminal**
Access Sensitivity	**1**	**PRP, NATO**
Points for New Issues	**3**	**See above**
Time Since Last Investigation	**1**	Date of Last Investigation: **1998-01-12**
Total ACES Points	**6**	

Flags: **New Foreclosure; New Drug Abuse; New FINCEN; New I-94; Registered Aircraft Owner**

ACES Sources Checked/Provided with this Referral

	Checked	Number of Reports	Attached
Credit Report	**Y**	**1**	**Y**
DSS EPSQ	**Y**	**1**	**Y**
FBI Criminal	**Y**	**1**	**Y**
FINCEN	**Y**	**1**	**Y**
Customs Foreign Travel	**Y**	**2**	**Y**
INS I-94	**Y**	**1**	**Y**
Military Pay	**Y**	**1**	**Y**
Planes	**Y**	**1**	**Y**
Real Estate	**Y**	**1**	**Y**
Vehicles	**Y**	**1**	**Y**

PERSON SUMMARY | PERSONNEL DATA | NOTIFICATIONS | REPORTS | ACCESS NUMBER MAINTENANCE | MAIN MENU | LOGOUT

REPORT OF CREDIT	Date 12/10/2001	

	Social Security Number 123-45-6789	Date of Birth 11/05/1960

Subjects Name: SMITH, ROBERT PEABODY
AKA #1:
AKA #2:
AKA #3:
AKA #4:
AKA #5:

NUMBER OF DOD CREDIT INQUIRIES 3

CREDIT REPORT SUMMARY

REPORTED FACTORS

REPORTED MORTGAGE BALANCE OWED	$120,415	DEBT CONSOLIDATION	(Y/N)	N	
REPORTED BLNC OWED(EXCLD MRTG)	$14,981	CHECK RETURNED	(Y/N)	N	
REPORTED PAST DUE	$0	CONSUMER COUNSELING	(Y/N)	N	
TOTAL NUMBER OF OPEN ACCOUNTS	14	CANNOT LOCATE	(Y/N)	N	
HIGH CREDIT (EXCLD MRTG)	$33,865	CONTACT MEMBER	(Y/N)	N	

	#ACCTS	LIABILITY		#ACCTS	LIABILITY
30 DAYS PAST DUE	0	$0	REPOSSESSION	0	$0
60 DAYS PAST DUE	0	$0	COLLECTION/CHARGE OFF	2	$3000
90 DAYS PAST DUE	0	$0	LIENS/JUDGEMENTS	0	$0
120 DAYS PAST DUE	0	$0	GARNISHMENT	0	$0
			BANKRUPTCY	0	$0
			INCLUDED IN BANKRUPTCY	0	$0
			FORECLOSURE(S)	1	$259,981

PREVIOUS HISTORY

	#ACCTS
30 DAYS PAST DUE	8
60 DAYS PAST DUE	2
90 DAYS PAST DUE	0
120 DAYS PAST DUE	0

Reported repossessions, collections, liens, judgements, garnishments, etc. may include accounts which have been satisfied. In addition the liability amounts may be included in "Reported Past Due."

WARNING

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870/ 786/ 356/ / / / / / / / / / / | **

DEPARTMENT OF DEFENSE - DOD DETAILED REPORT OF CREDIT

NAME/ADDRESS

NAME OF SUBJECTS	SS#	DATE-OF-BIRTH

SMITH, ROBERT PEABODY	123-45-6789	11/05/1960
CURRENT ADDRESS 456 LOCUST ST	CITY/STATE/ZIP NOWHERE IL 766660456	SINCE 08/1992
PREVIOUS ADDRESS PO BOX 31	CITY/STATE/ZIP GUNSLINGER TX 7888888	SINCE 11/1998
PREVIOUS ADDRESS (2) 3000 HOLLY HILL RD	CITY/STATE/ZIP HOTPLACE AL 3555555	SINCE 06/1988

EMPLOYMENT

CURRENT EMPLOYER SELF EMPLOYED	CITY/STATE/ZIP N/A	DT EMPL 02/1999	SALARY N/A
PREVIOUS EMPLOYER ABC AEROSPACE	CITY/STATE/ZIP N/A	DT EMPL 12/1995	SALARY N/A
PREVIOUS EMPLOYER (2) N/A	CITY/STATE/ZIP N/A	DT EMPL N/A	SALARY N/A

ERRORS / INFORMATIONAL MESSAGES

W INFO: 44 AKA: GARY
W INFO: 42 NICKNAME: R

CREDITORS

S O U R C E	CREDITOR NAME / ACCOUNT # / PAYMNT MANNER / TERMS	PAST DUE / $HI CRDT / STATUS/COMMENTS	BALANCE / LAST ACT / ACCT.USER / ACCT.TYPE	DATE OPND / COUNTER / PAYMNT HIST	ID# / KIND OF BUSINESS
W 1	AAFES 4444444444444444 SLOW PAY	-- REV/?	1260958 -- -- CREDIT LINE CLOSED,CONSUMER'S REQUEST,RP PD WAS 30 CREDIT CARD	-- 1/1994 REVOLVING	BANK CREDIT CARDS INDIVIDUAL 01000000 1111112111111
W 1	AIRTOUCH CELLULAR 1111111 CHRG OFF	$2500 --/?	3941098 $2500 $5000 PAID SATIS	8/2000 UNKNOWN	WATER COMPANIES INDIVIDUAL 00000000 999XXX4443333
W 1	AMERICAN GENERAL FINAN 5555555555555555 PAYS AS AGREED	-- REV/?	2545240 $0 $3000 CURR ACCT REV CHARGE ACCOUNT	5/1993 REVOLVING	PERSONAL LOAN COMPANIES INDIVIDUAL 00000000 NNNNNNNNNNNN

```
W  1  AMSOUTH BANK NA                              1208941            BANK CREDIT CARDS
      5555555555555555     SLOW PAY             --        -- 11/1983  JOINT      01000000
                                                    $8000             REVOLVING   NNNNNNNNNNNNN
                                          REV/?
                                                CREDIT LINE CLOSED,GRANTOR'S REQUEST,RPT
                                                PD WAS 30
                                                CREDIT CARD

W  1  BANK OF AMERICA                             3136364            ALL BANKS
      111111111111111      PAYS AS AGREED       --        -- 10/1994  INDIVIDUAL 00000000
                                                   $14758             INSTALLMENT 11111-1111111
                                           60/?
                                                PAID SATIS
                                                AUTO FINANCING

W  1  CITICORP/CHOICE                             1210007            BANK CREDIT CARDS
      4444444444444444     CHRG OFF      $500    $500  7/1995  AUTHORIZED 00000000
                                                    $6000             REVOLVING   11-NNNNN11111
                                         REV/141
                                                CURR ACCT
                                                CREDIT CARD

W  1  FIRST NATL SD VISA/MC                       0203010            BANK CREDIT CARDS
      4444444444444444       PAYS AS AGREED     --        --  7/1995  INDIVIDUAL 00000000
                                                    $5000             REVOLVING
                                          REV/?
                                                CREDIT LINE CLOSED,CONSUMER'S REQUEST,RP
                                                PAID SATIS
                                                CREDIT CARD

W  1  HOUSEHOLD BANK                              2156646            ALL BANKS
      2222222222222222       PAYS AS AGREED     --        $0  7/2000  INDIVIDUAL 00000000
                                                    $1000             REVOLVING   NNNNNNN1
                                          REV/?
                                                CURR ACCT
                                                REV CHARGE ACCOUNT

W  1  KIRTLAND FEDERAL CR UN                      8200198            MISCELLANEOUS
      4444444444444444       PAYS AS AGREED     --      $612  2/1991  JOINT      00000000
                                                    $5000             REVOLVING   1111111111111
                                         REV/50
                                                CURR ACCT
                                                CREDIT CARD

W  1  KIRTLAND FEDERAL CR UN                      8200198            MISCELLANEOUS
      4444444444444444       SLOW PAY           --        --  2/1991  JOINT      02000000
                                                    $5000             REVOLVING   1111111111111
                                          REV/?
                                                CREDIT LINE CLOSED,CONSUMER'S REQUEST,RP
                                                PD WAS30-2
                                                CREDIT CARD

W  1  KIRTLAND FEDERAL CR UN                      8710128            CREDIT UNIONS
      555555555              PAYS AS AGREED     --     $5416  8/1999  JOINT      00000000
                                                   $10000             INSTALLMENT 1111111111111
                                         36/317
                                                CURR ACCT
                                                AUTO FINANCING

W  1  KIRTLAND FEDERAL CR UN                      8710128            CREDIT UNIONS
```

```
                                                CURWAS30-4
                                                LINE OF CREDIT

W  1  RICHS/FDSNB                               1391674            RETAIL NOT CLASSIFIED
      11111111          PAYS AS AGREED      --      $0 12/1989  JOINT      00000000
                                                      --          REVOLVING   NNNNNNNNNNNN
                                             REV/?
                                                CURR ACCT
                                                REV CHARGE ACCOUNT

W  1  UNIPAC LINCOLN                            2996185            STUDENT LOANS
      4444444           SLOW PAY            --      --  6/1992  INDIVIDUAL 00010000
                                                     $4000          INSTALLMENT 1111113111111
                                               38/?
                                                PD WAS 60
                                                EDUCATIONAL

W  1  UNIVERSITY SUPPORT SVC                    1907139            STUDENT LOANS
      555               PAYS AS AGREED      --      --  2/1999  INDIVIDUAL 00000000
                                                     $4184          INSTALLMENT 1--1---11-1--
                                               71/?
                                                PAID SATIS
                                                EDUCATIONAL

W  1  UNIVERSITY SUPPORT SVC                    1907139            STUDENT LOANS
      888               PAYS AS AGREED      --      --  8/1996  MAKER      00000000
                                                    $16763          INSTALLMENT 1111111111111
                                             181/?
                                                PAID SATIS
                                                EDUCATIONAL

W  1  VERIZON WIRELESS                          3995126            WATER COMPANIES
      6666              PAYS AS AGREED      --    $196  3/2000  INDIVIDUAL 00000000
                                                     $441          UNKNOWN     1111111111N
                                             1/101
                                                CURR ACCT

W  1  WELLS FARGO HOME MORTG                    2990858            MORTGAGE COMPANIES
      9999              BAD DEBT            --  $259981  7/1992  JOINT      03020000
                                                   $287350          MORTGAGE
                                          360/2818
                                                FORECLOSURE
                                                CON REAL ESTATE
```

CREDITOR CODES	
TERMS - #MONTHLY PAYMENT/PAYMENT AMOUNT	PAYMENT HISTORY - 12 Month History of Manner of Payment
COUNTER - 2 bytes each for 30 Days/60 Days/ 90 Days/120 Days Past Due	DATE LAST ACT. - Date of Last Account Activity

MISCELLANEOUS INFORMATION

ACCOUNT NAME	ACCOUNT #	PHONE	ADDRESS
AAFES	4444444444444444	8009559900	1523 CONCORD PK WILMINGTON, DE 19803
AIRTOUCH CELLULAR	1111111	8006266611	POB 7329 BELLEVUE, WA 98008

```
  AMERICAN GENERAL FINAN 55555    BYMAILONLY 600 N ROYAL AVE EVANSVILLE, IN 47715
  AMSOUTH BANK NA        55555    2055603700 POB 216 BIRMINGHAM, AL 35201
  BANK OF AMERICA        1111     BYMAILONLY 411 N AKARD ST DALLAS, TX 75201
  CITICORP/CHOICE        44444    BYMAILONLY POB 6000 SIOUX FALLS, SD 57117
  FIRST NATL SD VISA/MC  4444     BYMAILONLY 2223 DODGE ST OMAHA, NE 68102
  HOUSEHOLD BANK         2222     BYMAILONLY 90 CHRISTIANA RD NEW CASTLE, DE 19720
  KIRTLAND FEDERAL CR UN 44444    5052434431 498 KIRTLAND AFB W ALBUQUERQUE, NM 87117
  KIRTLAND FEDERAL CR    4444     5052621727 POB 80570 ALBUQUERQUE, NM 87198
  MACYS/GECCCC           444      BYMAILONLY POB 29116 SHAWNEE MISSION, KS 66201
  MWARD/MBGA             3333     8055205100 POB 29116 SHAWNEE MISSION, KS 66201
  NBGL-MCRAES CREDIT DEP 6666     6019684220 POB 10327 JACKSON, MS 39289
  NBGL-PARISIAN          777      2059163052 750 LAKESHORE PARKWAY BIRMINGHAM, AL 352
  PROVIDIAN BANCORP      44444    9254165000 POB 9007 PLEASANTON, CA 94566
  REDSTONE FEDERAL CR UN 222      BYMAILONLY POB 5347 HUNTSVILLE, AL 35814
  RICHS/FDSNB            111111   8007629877 13141 34TH ST N CLEARWATER, FL 33762
  UNIPAC LINCOLN         44444    4024347140 POB 82525 LINCOLN, NE 68501
  UNIVERSITY SUPPORT SVC 555555   BYMAILONLY 205 VAN BUREN ST STE 200 HERNDON, VA 201
  VERIZON WIRELESS       666666   8006266611 POB 7329 BELLEVUE, WA 98008
  WELLS FARGO HOME MORTG 99999    3145295000 625 MARYVILLE CTR DR SAINT LOUIS, MO 631
                                     END OF REPORT

W1    TRW-EXPERIAN
      701 EXPERIAN PARKWAY
      PO BOX 2002
      ALLEN, TX 75013
      PHONE: (888) 397-3742

W1    Name: ROBERT PEABODY SMITH                          SSN: 123-45-6789
      DOB : 10/02/1951

      Current Address:        456 LOCUST ST                    Since: 08/1992
                              NOWHERE IL 766660456

      Previous Address:       PO BOX 31                        Since: 11/1998
                              GUNSLINGER TX 7888888

      Previous Address:       3000 HOLLY HILL RD               Since: 06/1988
                              HOTPLACE AL 3555555

      Current Employment:     SELF EMPLOYED                    Date Empl: 02/1999
                              N/A

      Prior Employment:       ABC AEROSPACE                    Date Empl: 12/1995
                              N/A
*** REPORT LENGTH = 24763"
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APPENDIX C: ESTIMATED ACES ELIGIBLE RECORDS

Calculations based upon assumption that Top Secret clearance holders number 500,000 personnel and new hiring keeps the population constant. Secret clearance holder number 2,000,000 and is held constant through annual hiring

TOP SECRET MID POINT ACES SCREENING ELIGIBLE:

The number of people expected to undergo ACES midpoint checks during the first calendar year of ACES operations is 77,943. That figure is based on the assumption that SSBIs and TS-PRs take approximately six months to complete, resulting in the proportion of the TS/SCI population who would reach their 30-month anniversary of completing their last SSBI or TS-PR during a given year being 1 out of 5.5 or 18.2 percent. Consequently, if no one ever retired, quit or was reassigned to less sensitive duties, 90,909 people (.182 X 500,000) would be expected to undergo midpoint checks. However, people do leave positions that require clearances for a variety of reasons. A 5 percent attrition rate was used to calculate the estimated number of people who would reach that 30-month post-investigation anniversary (90,909 X 0.95 X 0.95 X 0.95), which resulted in the estimate of 77,943.

TOP SECRET ANNUAL ACES SCREENING ELIGIBLE:

The number of people expected to undergo ACES annual checks during a typical calendar year of ACES operations is 345,452. That figure is based on the assumption that SSBIs and TS-PRs take approximately six months to complete, resulting in the proportion of the TS/SCI population who would reach either their 12 month, 24 month, 36 month or 48 month anniversary of completing their last SSBI or TSPR during a given year being 4 out of 5.5 or 72.7 percent. Consequently, if no one ever retired, quit or was reassigned to less sensitive duties, 363,636 people (.727 X 500,000) would be expected to undergo annual checks. However, people do leave positions that require clearances for a variety of reasons. A 5 percent attrition rate was used to calculate the estimated number of people who would reach one of the aforementioned post-investigation anniversaries (363,636 X 0.95) with resulted in the estimate of 345,452.

SECRET MID POINT ACES SCREENING ELIGIBLE:

If each year 10% of the 2,000,000 Secret Clearances holders undergo a PR and we assume there is a 5% attrition rate, then at the 60 month point from Year 0, there will be 150,000 Secret cleared personnel that would qualify for a Secret level Mid-Point ACES check.

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APPENDIX D: ACES-LIKE SCREENING FACTORS

Screening Source			Phase PR Data
Credit Report			X
Defense Clearance Investigation Index (DCII)			X
FBI Headquarters Name Check			X
Military Records			X
Title 31:Large Currency Transaction Reports			X
Public Records: Bankruptcies, Divorce, Court			X
FBI Headquarters Criminal Check			X

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APPENDIX E: IDENTIFICATION OF CASE WITH ONE OR MORE ISSUES

Statistics

credit ge 1 or dcii ge 1 or milit ge 1 or title_31 ge 1 or fbi_hq ge 1 or fbi_name ge 1 or pub_rec ge 1 or f... (FILTER)

N	Valid	1611
	Missing	0

credit ge 1 or dcii ge 1 or milit ge 1 or title_31 ge 1 or fbi_hq ge 1 or fbi_name ge 1 or pub_rec ge 1 or f... (FILTER)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Selected	1422	88.3	88.3	88.3
	Selected	189	11.7	11.7	100.0
	Total	1611	100.0	100.0	

Aces-like screening identified 11.7% of 1611 personnel with one or more issues of concern that was identified in the final adjudication. As discussed, this is a reasonable percentage to start. If ACES expands to annual screening, the number of cases that have issues is expected to drop because of the periodicity between checks and earlier detection of issue-relevant information. Conversely, the Secret Population is expected to have more cases identified with issue-relevant information than 12 percent for the Top Secrets population. This analysis assumed 20 percent for the Secret population having at least one issue identified by ACES.

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APPENDIX F: MODERATE TO MAJOR SEVERITY

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
credit ge 1 or dcii ge 1 or milit ge 1 or title_31 ge 1 or fbi_hq ge 1 or fbi_name ge 1 or pub_rec ge 1 or f... (FILTER) * OVR_SER	1611	100.0%	0	.0%	1611	100.0%

credit ge 1 or dcii ge 1 or milit ge 1 or title_31 ge 1 or fbi_hq ge 1 or fbi_name ge 1 or pub_rec ge 1 or f... (FILTER) * OVR_SER Crosstabulation

Count

		OVR_SER			Total
		0	1	2	
credit ge 1 or dcii ge 1 or milit ge 1 or title_31 ge 1 or fbi_hq ge 1 or fbi_name ge 1 or pub_rec ge 1 or f... (FILTER)	Not Selected	1004	299	119	1422
	Selected		45	144	189
Total		1004	344	263	1611

ACES-like screening identified 55 percent of the cases that had moderate to major level issues of concern in the final adjudication of the cases. If ACES expands to annual screening, the number of cases that require expansion into SII is expected to drop because of the periodicity between checks and the earlier identification of issue-relevant information.

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APPENDIX G: CAF MANPOWER ESTIMATES

Number and Work-Years for
Eligibility Determinations (FY 90)

Total DOD Adjudication System

Type of Case	Cases Completed Number	Cases Completed %	Average Hours per Case	Total Work-Years*	Total %
Special Background Investigation (SBI) Total	107942	12.39	1.24	76.03**	19.78
SBI-Non-issue case	77190	8.86	.73	66.11	8.29
SBI-Issue without due process	24733	2.84	1.37	19.15	4.98
SBI-Issue with due process	5109	.59	3.86	11.16	2.90
SBI-Administrative closure	910	.10	7.62	3.93	1.02
Background Investigation (BI) Total	59674	6.85	.68	29.90	7.78
BI-Non-issue case	42422	4.87	.43	10.33	2.69
BI-Issue without due process	13798	1.58	1.71	13.39	3.48
BI-Issue with due process	2847	.33	2.09	3.38	.88
BI-Administrative closure	607	.07	8.15	2.80	.73
National Agency Checks (NAC) (NACI, ENTNAC, secret PRs) Total	419207	48.11	.57	135.39	35.21
NAC-Non-issue case	323576	37.14	.31	57.09	14.85
NAC-Issue without due process	76528	8.78	.92	40.04	10.41
NAC-Issue with due process	16013	1.84	2.13	19.29	5.02
NAC-Administrative closure	3090	.35	10.84	18.97	4.93
Periodic Reinvestigation (PR) Total	132634	15.22	.75	56.19**	14.61
PR-Non-issue case	98171	11.27	.37	20.57	5.35
PR-Issue without due process	25965	2.98	1.29	19.01	4.94
PR-Issue with due process	5651	.65	2.02	6.45	1.68
PR-Administrative closure	987	.11	16.71	9.34	2.43
Continuing Evaluation Total	151834	17.46	.88	75.39	19.61
CE-Non-issue case	15387	1.77	.47	4.11	1.07
CE-Issue without due process	79512	9.13	.99	44.61	11.60
CE-Issue with due process	6844	.79	2.20	8.52	2.22
CE-Administrative closure	50091	5.75	.64	18.15	4.72
Other				23.19	6.03
Grand Total	871291	100.00	.76	396.09	100.00

*This represents the total work-hours for all completed cases divided by the expected number of work-hours for one person for a year.

**These totals do not equal the sum of the four subcategories of cases because DIA only provided total number of SBIs and PRs without breaking these numbers out by subcategories.

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APPENDIX H: ANNUAL GOVERNMENT SALARY (FY 2002)

STEP INCREASES

GS	1	2	3	4	5	6	7	8	9	10
1	14757	15249	15740	16228	16720	17009	17492	17981	18001	18456
2	16592	16985	17535	18001	18201	18736	19271	19806	20341	20876
3	18103	18706	19309	19912	20515	21118	21721	22324	22927	23530
4	20322	20999	21676	22353	23030	23707	24384	25061	25738	26415
5	22737	23495	24253	25011	25769	26527	27285	28043	28801	29559
6	25344	26189	27034	27879	28724	29569	30414	31259	32104	32949
7	28164	29103	30042	30981	31920	32859	33798	34737	35676	36615
8	31191	32231	33271	34311	35351	36391	37431	38471	39511	40551
9	34451	35599	36747	37895	39043	40191	41339	42487	43635	44783
10	37939	39204	40469	41734	42999	44264	45529	46794	48059	49324
11	41684	43073	44462	45851	47240	48629	50018	51407	52796	54185
12	49959	51624	53289	54954	56619	58284	59949	61614	63279	64944
13	59409	61389	63369	65349	67329	69309	71289	73269	75249	77229
14	70205	72545	74885	77225	79565	81905	84245	86585	88925	91265
15	82580	85333	88086	90839	93592	96345	99098	101851	104604	107357

Source:http://federaljobs.net/99gsf.htm

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APPENDIX I: COMPENSATION LOADING FACTOR

TABLE 2

Estimate of Total Costs by Facility for Current System (FY 90)
(Dollars in Millions)*

Facility	Full-Time Equiv.	Direct Civilian Labor $	Military Labor $	Total Labor $	G & A Factor %	Total G & A $	Total Cost $
CCF	129	3.11	1.89	5.00	52	2.60	7.60
DONCAF	129	4.83	0	4.83	50	2.42	7.25
NIC	29	.84	.42	1.26	72	.92	2.18
NAVSECGRU	18	.44	.35	.79	58	.45	1.24
AFSCO	40	1.74	11	1.85	52	.96	2.81
AF/INS	32	.81	.62	1.43	47	.67	2.10
DISCO	184	5.12	0	5.12	51	2.62	7.74
DISCR	74	3.89	.26	4.15	52	2.18	6.33
DCA	8	.32	0	.32	51	.16	.48
DCAA	15	.68	0	.68	45	.31	.99
DIA	17	.86	0	.86	49	.42	1.28
DIS	3	.11	0	.11	50	.05	.16
DLA	3	.16	0	.16	49	.07	.23
DMA	18	.80	.02	.82	46	.38	1.20
DNA	2	.09	0	.09	53	.05	.14
DODIG	4	18	0	.18	50	.09	.27
JCS	2	.07	.04	.11	48	.05	.16
WHS	15	.71	0	.71	50	.35	1.06
Total	722	24.76	3.71	28.47	52	14.75	43.22

* All estimates in this table are based on full-time equivalents and not on number of personnel assigned.

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THIS 52 PERCENT REPRESENTS THE ADDITIONAL COSTS ASSOCIATED WITH THE CAF FUNCTIONS NOT COVERED IN THE SALARY CALCULATIONS. THIS IS THE ADDITIONAL LOADING FACTOR ASSUMED IN ORDER TO CALCULATE THE COST OF A FULL-TIME EQUIVALENT.

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APPENDIX J: ACES SYSTEM DESCRIPTION

1. OVERVIEW

The ACES pilot program has multiple purposes, but specifically it will screen public and commercial records of personnel who hold security clearances within DoD. The system will identify personnel who have issue-relevant information of interest to the pilot CAF adjudicators that was not previously noted on the last PR. Second, the ACES pilot will identify the number of cases in which it identified personnel with issues of concern that would have not have otherwise come to the attention of the adjudicators. Third, the pilot study will attempt to identify cases in which ACES software failed to identify issues present that adjudicators considered of interest. The project's intent is to identify personnel having security issues of concern earlier than would have been possible under the current PR standards, by using automated data sources and screening software requiring minimal human intervention.

The intent of ACES is to use automated sources and evaluation processes to screen records earlier and faster. This allows current clearance holders to be screened using automated sources ahead of the regularly scheduled PR. This means in most cases issue-relevant information will be found earlier than normal and, secondly, some portion of those screened would have been attritions before their regularly scheduled PR. This group of clearance holders will now be subject to ACES screening to help monitor their security relevant behaviors, whereas they would have had only the initial investigation and never been subject to a PR. Additionally, identifying issue-relevant information may lead to better investigations and interventions due to the recency of the information.

The ACES pilot study intent is to determine how many additional issue cases are identified by the ACES program and validate the value of the program with the CAFs. The increased workload on the CAFs could be a significant drain on limited resources if the ACES identifies a substantial number of issue cases. This drain would continue unless adjudicators modified the criteria they established for use by ACES or were staffed for the increased workload.

2. SYSTEM SPECIFICATIONS

The development and testing of ACES is being be conducted by PERSEREC with the assistance of Joint Personnel Adjudication System (JPAS) program office, the Air Force Central Adjudication Facility, and the Defense Intelligence Agency Central Adjudication Facility. The Deputy Assistant Secretary of Defense (S&IO) is the primary decision authority regarding matters pertaining to ACES. ACES will have several elements that drive the process. The system is comprised of data sources, data evaluation, ACES product and program management. In order to determine the cost of ACES, we need to understand the elements.

a. Data Sources

The first element is obtaining access and interface with the federal, state and commercial databases. The pilot study is currently accessing databases on an incremental basis to test the interface between the data records and the ACES software. Once the interface is finalized, the databases will be accessed by ACES on demand. Information contained in the various databases populates fields within the ACES software and the ACES program evaluates that data. Access to some of the data sources requires either yearly fees or per case charges. The pilot study will determine the optimum interface and subsequently the final arrangement for access costs. The cost assessment will exclude the pilot study effort as part of the final costs to access data. ACES will eventually access approximately 18-22 separate databases. The databases ACES will access are listed in Appendix A.

b. Data Evaluation

Once the data has been extracted from the individual databases, the ACES software compiles the data and generates a report based upon the data received. The core system is an Oracle 8i database that will run on a commercial-off-the-shelf (COTS) Solaris 8 operating system. The commercial software allows for flexibility to access various databases with the use of two COTS dynamic link libraries. The system will generate HTML output for eventual delivery to customers via the secure internet. Various security arrangements with the database host and ACES program will dictate how the system is eventually accessed remotely. The central operations center will be at the Defense Manpower Data Center West (DMDC-West) in Seaside, CA. DMDC will be

the primary system administrators with responsibilities outlined in the ACES program management plan (PMP.)

c. Aces Product

The ACES product will be a prioritized list of subjects who have data within the various databases listed in Appendix A that is of some interest to the respective CAFs. The ACES report will be delivered to the CAFs for disposition. The CAFs will take the ACES output and determine whether additional action needs to happen. The action taken by the CAF will be dependent on the information found within the ACES report and could vary greatly. A sample ACES output is contained in Appendix B.

d. Cost Estimation

This thesis will attempt to identify the cost of the ACES program in terms of direct and indirect costs. The preliminary tests of ACES and simulated data screenings with ACES-like selection criteria will serve as a rough estimate of what to expect in term of additional cases. If ACES generates additional cases to be screened, there will invariably be additional cost to the CAFs and DSS to handle the new cases. Both the CAFs and DSS need to be aware of the additional requirement they may face with an introduction of ACES into the PSI process. Although the ACES pilot study is in progress, the analysis presented in this thesis will attempt to place an estimate on the impact costs to the CAFs and DSS using assumptions based upon current policies, practices and procedures. Data from the various DSS and CAF studies will be used to ascertain how the CAFs and DSS will handle the additional ACES cases. The final results of the ACES pilot study are of interest to any agency that has cleared personnel and has interest in either how the potential increase in performance (e.g., more issues detected, issue detected sooner and less manual intervention of clean cases) ACES may bring to the PSI process or the additional costs stemming from it that the PSI process may incur.

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APPENDIX K: DEFINITIONS AND ABBREVIATIONS

In order to understand the terminology used by the Defense Security Service, selected terms used in this report are listed in alphabetical order along with their definitions and abbreviations.

1. ACES – Automated Continuing Evaluation System, an automated system that gathers information from public and commercial databases and analyzes the results according to predefined selection criteria. The ACES product will be a list of personnel that have issues of concern as a result of the screening of the databases and the reports and records associated with those checks.
2. Adjudication – The process used by the adjudicator to analyze positive and derogatory information obtained in a personnel security investigation. Its purpose is to reconcile the information with established standards for granting a security clearance. (Hill, 1991)
3. Adjudicator – A person who evaluates the information gathered by a personnel security investigation and determines whether or not to grant a clearance or continuation of a clearance.
4. Case Control Management System (CCMS) – An automated system that controls the workflow of the investigations within DSS. The system tracks the individual and the various work required to complete an investigation for the appropriate CAF final review.
5. National Agency Check – A search of the indexes and files of appropriate federal agencies including the FBI investigative and criminal history, the Office of Personnel Management Security/Suitability Investigation Index (SSI), the Department of Defense Defense Clearance and Investigation Index (DCII) and other national agencies that may have information bearing on the loyalty, trustworthiness, and suitability of individuals under the investigative jurisdiction of the Department of Defense (DoD.) (Cohen, 2000)

6. National Agency Check with Local Agency and Credit Checks (NACLC) – A search of the indexes and files contained within a NAC with additional inquiries into credit bureau and local law enforcement checks covering places where the applicant has resided, worked or gone to school within the past five years.

7. Periodic Reinvestigation (PR) – An investigation required every five years for personnel with Top Secret clearances (TSPR, TS-SSBI-PR), or ten years for personnel with Secret or Confidential clearances (S-PR or C-PR) for the purpose of determining an individual's continued eligibility for access to classified information. TSPRs, also known as Single Scope Background Investigations-Periodic Reinvestigation (SSBI-PR), have the same requirements as those for an initial SSBI with the following exceptions: (a) NAC is not required on spouse or cohabitant if completed in initial, (b) no educational review required, (c) employment verified since last investigation only, (d) only two references and neighbors must be interviewed, (e) Treasury Department's financial data is checked for the period covering the period while the person held a security clearance. (Cohen, 2000)

8. Personnel Security Investigation (PSI) – PSIs are required to determine an individuals suitability to handle classified material. They also include investigating allegations that arise subsequent to adjudicative actions.

9. Phased Periodic Reinvestigation (Phased PR) – The result of the Phase PR study, where the Periodic Reinvestigation (PR) is applied in phases beginning with of Phase I sources. If no evidence of misconduct is found in Phase I sources, the PR is completed and sent to the CAF for review and adjudication. If derrogatory evidence is found in the Phase I sources, then a complete PR is conducted using all the data sources in Phase I and Phase II.

10. Single Scope Background Investigation (SSBI) – Established by National Security Directive 63 in December 1991 to replace the Background Investigation (BI) and the Special Background Investigation (SBI) the investigation covers the last ten years of a subject's life. It includes a detailed

interview with the subject, (SI), (b) NAC with fingerprints, (c) verification of U.S. Citizenship, (d) independent birth, education, employment and military history, (e) interview with four references, former spouses, employers, neighbors (f) civil and criminal histories, (g) financial information and credit bureau check.

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APPENDIX L: IMPACT COST OF ACES

TOP SECRET MID-POINT & ANNUAL ACES CHECKS

	Assumptions	FY03	FY04				FY05				FY06			
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Type of Check Performed		Mid Point TS	Mid Point TS	Mid Point TS	Mid Pont TS	Mid Point TS	Annual TS	Annual TS	Annual TS	Annual TS	Annual TS	Annual TS	Annual TS	Annual TS
TS Population (Note 1)	500,000													
Number of ACES Checks Performed (Note 1)		19,485	19,485	19,485	19,485	19,485	86363	86,363	86363	86363	86363	86363	86363	86363
Eatimated ACES "Hit" Rates														
Estimated % TS pop checked with issues (Note 2) H	12%													
LOW	8%	12%	12%	12%	12%	12%	10%	10%	10%	10%	8%	8%	8%	8%
		2338	2338	2338	2338	2338	8636	8636	8636	8636	6909	6909	6909	6909
SII Action Cases														
--TS Cases Requiring SII (Note 3) HIGH	50%													
LO	40%	50%	50%	50%	50%	50%	40%	40%	40%	40%	40%	40%	40%	40%
		1169	1169	1169	1169	1169	3454	3454	3454	3454	2763	2763	2763	2763
DSS SII Case Costs (Note 4)	$ 1,342													
Total Estimated DSS SII Costs		$ 1,568,798	$1,568,798	$1,568,798	$ 1,568,798	$ 1,568,798	$ 4,635,268	$ 4,635,268	$ 4,635,268	$ 4,635,268	$ 3,707,946	$ 3,707,946	$ 3,707,946	$ 3,707,946
Estimated CAF Handling Costs														
Manpower Requirement (Note 5)														
--Hours per Issue case	1.88													
--Hours to Handle TS ACES Issue Cases		4395.44	4395.44	4395.44	4395.44	4395.44	16235.68	16235.68	16235.68	16235.68	12988.92	12988.92	12988.92	12988.92
Average Work Hours per Year	1776													
Total Man-Years Adjudicating ACES Issue Cases		2.47	2.47	2.47	2.47	2.47	9.14	9.14	9.14	9.14	7.31	7.31	7.31	7.31
--Salary Rate GS12-Step 5 2002 Salary (Note 6)	$ 56,619													
---Compensation Loading Rate (Note 7)	52%													
---Loaded Hourly Rate	$86,061													
Total Estimated CAF Handling Expenditures		$212,992.92	$212,992.92	$212,992.92	$212,992.92	$212,992.92	$786,743.75	$786,743.75	$786,743.75	$786,743.75	$629,413.22	$629,413.22	$629,413.22	$629,413.22
Estimated ACES Check Costs														
Database Check Costs	$6.00	$116,910	$116,910	$116,910	$116,910	$116,910	$518,178	$518,178	$518,178	$518,178	$518,178	$518,178	$518,178	$518,178
ACES System Costs		$247,000	$247,000	$247,000	$247,000	$251,000	$251,000	$251,000	$251,000	$277,000	$277,000	$277,000	$277,000	$300,000
Total Estimated ACES Check Expenditures		$363,910	$363,910	$363,910	$363,910	$367,910	$769,178	$769,178	$769,178	$795,178	$795,178	$795,178	$795,178	$818,178
Total Quarterly Expenditure Estimates		$2,145,700	$2,145,700	$2,145,700	$2,145,700	$2,149,700	$6,191,189	$6,191,189	$6,191,189	$6,217,189	$5,132,537	$5,132,537	$5,132,537	$5,155,537
FY03		$2,145,700												
FY04					$8,586,800									
FY05								$24,790,756						
FY06													$20,553,148	

SECRET MID-POINT ACES CHECKS

	Assumptions	FY06			
		Q1	Q2	Q3	Q4
Type of Check Performed		S - Midpoint	S - Midpoint	S - Midpoint	S - Midpoint
SECRET Population (Note 1)	2,000,000				
Number of ACES Checks Performed (Note 1)		36846	36846	36846	36846
Eatimated ACES "Hit" Rates					
Est. % SEC pop checked with issues (Note 2)	20%	7369.2	7369.2	7369.2	7369.2
SII Action Cases					
--SECRET TS Cases Requiring SII	50%	3684	3684	3684	3684
DSS SII Case Costs (Note 4)	$ 1,342				
Total Estimated DSS SII Costs		$ 4,943,928	$ 4,943,928	$ 4,943,928	$ 4,943,928
Estimated CAF Handling Costs					
Manpower Requirement (Note 5)					
--Hours per Issue case	1.88				
--Hours to Handle TS ACES Issue Cases		13854.10	13854.10	13854.10	13854.10
Average Work Hours per Year	1776				
Total Man-Years Adjudicating ACES Issue Cases		7.80	7.80	7.80	7.80
--Salary Rate GS12-Step 5 2002 Salary (Note 6)	$ 56,619				
---Compensation Loading Rate (Note 7)	52%				
---Loaded Hourly Rate	$86,061				
Total Estimated CAF Handling Expenditures		$671,337.67	$671,337.67	$671,337.67	$671,337.67
Estimated ACES Check Costs					
Database Check Costs	$6.00	$221,076	$221,076	$221,076	$221,076
ACES System Costs		$277,000	$277,000	$277,000	$300,000
Total Estimated ACES Check Expenditures		$498,076	$498,076	$498,076	$521,076
Total Quarterly Expenditure Estimates		$6,113,341	$6,113,341	$6,113,341	$6,136,341
FY06			$24,476,364		

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